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POWERING INNOVATION

MECHANCIAL INSTALLATION INSTRUCTIONS

Smart Alternator – Mercedes Sprinter
Engine: OM654 I-4

The document applies only to the mechanical installation of the Lithionics PowerFit Smart Alternator onto the Mercedez Benz Sprinter OM654 I-4 platform **with** the factory installed “N62” option auxiliary alternator and a Lithionics Battery System*.

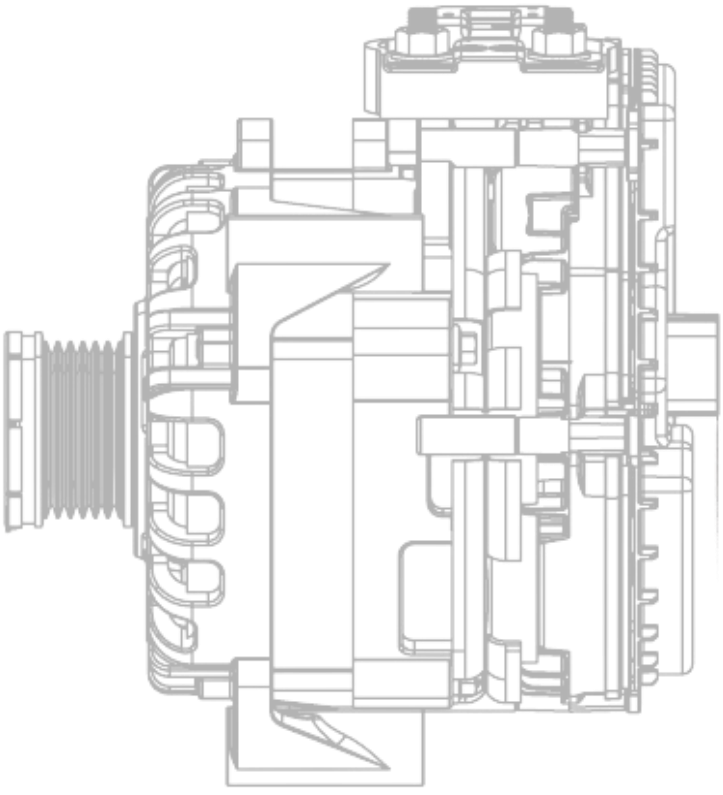
For a Mercedes Benz compliant (BEG) installation, the PowerFit Smart Alternator must be used on the Sprinter OM654 I-4 platform as it meets the requirements per the official Mercedes Benz Sprinter Body Equipment Guidelines (BEG).

This document does NOT cover the installation of factory “N62” option auxiliary alternator components, electrical components assembly such as crimping ring terminal lugs, applying heat-shrink tubing, mechanical skills such as torquing and aligning of parts during installation, etc. These aspects and skills shall be understood and practiced before attempting installation.

Installation shall be performed by an SAE automotive technician familiar with the applicable vehicle platform as well as CANbus networking and wiring. **Complete the mechanical installation first before proceeding to electrical instructions.**

*Requires a Lithionics Battery System version 9 or later.

This guide is for reference. Install per Mercedes dealer technical information.



Included in the Lithionics PowerFit Smart Alternator box:

- The Smart Alternator unit with pre-installed 6-rib one-way (OAP) pulley
- 2x M8-1.25 Stainless Steel Locking Flange Nuts
- 2x M10-1.5 x 90mm Flange Hex Head Bolts

Special Installation Tools:

- Stretch belt installation tool (optional), Ex. **OEMTOOLS #24388** or equivalent
- Crank rotation tool (required)

Additional Parts Needed:

- Alternator Splash Guard/Shield
    - ***NOTE*:** Installation of an Alternator Splash Guard/Shield is required to maintain warranty coverage. This component protects the alternator from water intrusion and road debris, which can damage the alternator or cause premature failure.

If your vehicle does not have the factory installed "N62" option, then the following parts must also be installed. The installation of these parts is not covered in this guide and should be performed by a factory dealer.

Sprinter OM654 I-4 factory "N62" option - auxiliary alternator parts (for reference only):

Item	Qty	P#	MFR
Belt	1	A 000 993 58 00	MB
Crankshaft Pulley	1	A 654 032 10 00	MB
Crankshaft Pulley Bolts	4	A 000 990 68 08	MB
N62 Bracket	1	A 654 150 20 01	MB
Bracket Bolts	4	N 910143 008019	MB
Belt Tensioning Pulley	1	A 654 200 22 00	MB
Belt Tensioning Pulley Cover Cap	1	A 160 237 01 81	MB

Installation Procedure

Step 1

Disconnect the chassis battery and any other power sources in the vehicle such as the house battery bank. Confirm 0V DC on the chassis and house system with a multimeter.

Step 2

Remove any existing auxiliary alternator as necessary.

The alternator bracket has 2 bushing inserts that clamp onto the alternator when its mounting bolts are tightened, these inserts may need to be “reset” before installing the new alternator or else the clearance will be too tight.

To reset them use a pry bar, or a brass punch and hammer to gently push/tap them back to their starting position which is flush with the forward-facing side of the bracket housing.

NOTE: The above 2 pictures show a V6 sprinter N62 bracket, but the same bushing inserts apply.

Step 3

Position the Smart Alternator onto the factory auxiliary alternator bracket with the terminal posts upwards and the pulley towards the front of the van, then align with the lower mounting point and install one of the alternator M10 mounting bolts that were provided with the kit finger tight. We will fully torque this bolt in step 5.

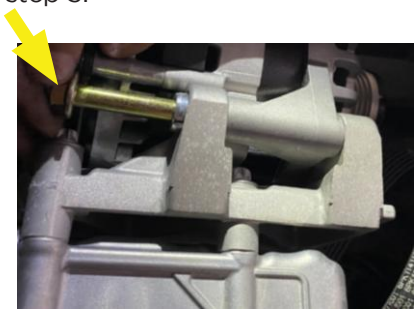


Figure 1: 1st bolt installation

Step 4

Rotate the alternator up. With the alternator in position, install the second M10 alternator mounting bolt on the top side of the alternator.

Figure 2: 2nd bolt installation

Step 5
Use a 15mm socket to tighten the (2) alternator mounting bolts, then torque each bolt to **32Nm (23.6 ft-lb).**

Step 6
Take a flat head screwdriver and carefully remove the cap on the face of the tensioner pulley mounted on the alternator bracket. Then use a T45 bit and loosen the bolt at the center of the tensioner pulley (Fig. 3). With the bolt loose, this will allow the pulley to move counter-clockwise to relieve tension when installing the belt.

Figure 3: Loosen with T45 bit

Step 7
Position the belt around the small alternator pulley (Fig. 4), then feed the belt under the tensioner pulley (Fig. 5), and up around the crank pulley (Fig. 6). See belt routing diagram (Fig. 8).

Figure 4

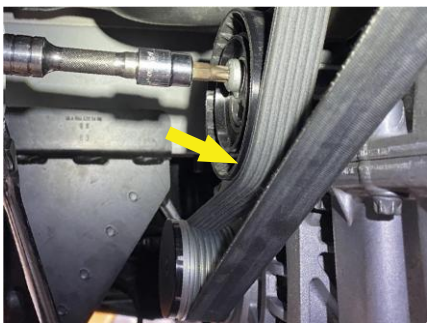


Figure 5

Step 8

Using an alternator stretch belt tool, position the belt tool to help guide the belt in place while rotating the crank pulley with the crank rotation tool (Fig. 6). Rotate the crank until the belt is completely around the large crank pulley and seated properly. See Figure 8 if using OEMTOOLS #24388. For additional detail, reference figure 9 diagram shown for exact route of the secondary alternator belt.

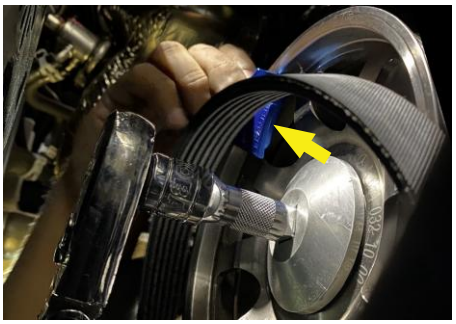


Figure 6

Figure 7

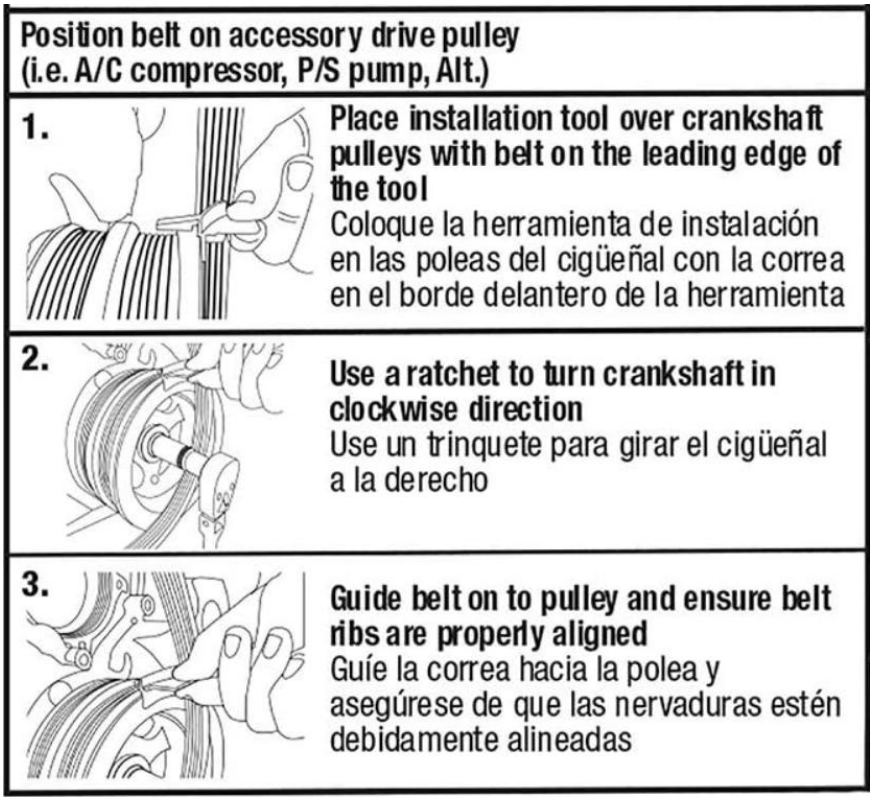


Figure 8

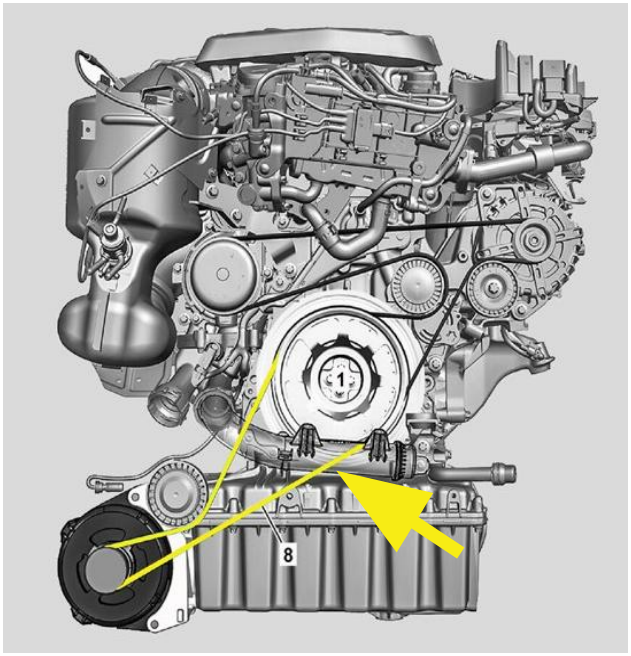


Figure 9

Step 9

With the belt in place, use a T55 bit and rotate the tensioner pulley in the clockwise direction so that tension is added to the belt and the tensioner hits its end-stop position (Fig. 10), then use a T45 bit to torque the bolt at the center of the tensioner pulley to **19Nm (14ft-lbs)**.

Figure 10

Step 10

Reinstall the plastic cap on the tensioner pulley (Fig. 11).

Figure 11

Step 11

Install a splash guard/shield that will protect the alternator from direct exposure to water spray/mist and any road debris.

Step 12

Proceed to the electrical installation Instructions: “Smart Alternator - Electrical Installation Instructions”